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# SCIENCE

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## THE RELATION OF PHYSICAL CHEMISTRY TO PHYSICS AND CHEMISTRY.<sup>1</sup>

ACCORDING to the program, I have to consider the 'General Principles and Fundamental Conceptions which connect Physical Chemistry with the Related Sciences, reviewing in this Way the Development of the Science in Question itself.'

Let me begin by defining physical chemistry as the science devoted to the introduction of physical knowledge into chemistry, with the aim of being useful to the latter. On this basis I can limit my task to the relations of physical chemistry to the two sciences it unites, chemistry and physics.

But even if I limit myself to these relations, which are not the only two,<sup>2</sup> I wish to restrict myself yet more, in order, in the spirit of this congress, to call your attention to broad views. So I shall follow up only two lines, in answering two questions regarding two fundamental problems in chemistry: (1) What has physical chemistry done for our ideas concerning matter? (2) What has it done for our ideas concerning affinity?

The small table which I have the honor to put before you will enable us to answer these questions by appeal to the scientific development of our science, which also I have to review:

### I. IDEAS CONCERNING MATTER.

1. Lavoisier, Dalton (1808).

2. Gay-Lussac, Avogadro (1811).

<sup>1</sup> Read before the International Congress of Arts and Science.

<sup>2</sup> In Chicago I devoted to this subject eight lectures, which have since appeared in the Decennial Publications under the title 'Physical Chemistry in the Service of the Sciences,' Chicago, 1903.